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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/753,293

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Elizabeth M. Walker

1971A. EEM

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05/26/2006

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EXAMINER

ZIMMER, MARC S

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/753,293

Applicant(s)

WALKER ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 6/30/05

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Objections

Claims 8 and 9 are objected to as they seem not to be further limiting of claim 1 insofar as the vinyl-substituted polysiloxane appears to be the only material mentioned in claim 1 therefore it necessarily comprises 100% of the materials present.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Each of these claims recites a molecular weight associated with a specified polysiloxane but Applicant has not delineated whether the molecular weight being reported is numer-average or weight-average molecular weight.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1 Applicant characterizes the polymer

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material as being both cross-linked and crosslinkable thereby suggesting that Applicant is contemplating a partially-cured polysiloxane that still has available crosslinkable groups by virtue of the fact that it has only been partially cured. Reading this phrase in the context of Applicant's Specification was not helpful in ascertaining Applicant's intent. Clarification is required. For the purpose of evaluating the claims against the prior art, it has been presumed that the polymer is one that has not yet been cured and contains both alkenyl moieties and hydrosilyl groups.

Applicant should also strongly consider replacing the term "silicone hydrogen group" with something more art-accepted, e.g. hydrosilyl groups or silicon-bound hydrogen atoms. At least, the groups alluded to should be characterized as "silicon hydrogen" groups since "silicone hydrogen" groups is even less specific as to spatial relationships between the silicon atoms and the hydrogen atoms.

Claim 2 is further rejected because the phrase "methyl divinyl siloxane" is open to multiple interpretation. Is Applicant referring to a dimethylsiloxane bearing a vinyl group at each terminus or, instead, a dimethylsiloxane featuring divinylmethylsiloxy groups at each end? Clarification is required.

Claim 7 is further rejected because there is a suggestion that the so-called "polymer" of claim 1 further comprises a crosslinking agent but claim 1 is believed to be directed to a polymer alone, as opposed to a composition. That is to say, how can the polymer be further limited by saying that it contains a silicon hydrocarbon crosslinking agent? Another possibility is that claim 1 was intended to have been directed to a composition of which the vinyl-terminated resin was one of a plurality of essential

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ingredients. For the purpose of Examination, and until further clarification is provided, it shall be assumed that claim 7 contemplates a composition comprising an alkenyl-functional polymer of either type mentioned in claim 1 and the "silicon hydrocarbon crosslinking agent".

Claims 10 and 11 are lacking proper antecedent basis in claim 1 as the latter is silent as to the presence of a "silicon hydrocarbon crosslinking agent". Further, this structural description is lacking and, although the Specification would seem to indicate that the intended polymer is one comprising siloxane units and divalent hydrocarbon linkages in the backbone, a reasonable interpretation of this phrase would embrace any silicon-atom containing polymer including, for example carbosilane polymers or ordinary polysiloxanes containing hydrocarbon substituents. It is submitted that Applicant might consider replacing the aforementioned description with a formulaic description.

Claim Analysis

Applicant is advised that, while claim 1 recites two embodiments of a curable siloxane polymer the first is nothing more than a vinyl-functional polysiloxane, which is clearly unpatentable. Although polysiloxanes bearing both hydrosilyl groups and vinyl substituents are decidedly less well-known, the skilled artisan will appreciate that these polymers are, likewise, unpatentable. Although literally thousands of patents apply at least to claim 1, the Examiner will only cite a select few that are most germane to the largest number of claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8-9, and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Okamura, U.S. Patent # 4,339,564. Okamura discloses a dual-curable polysiloxane composition comprising a vinyl-functionalized polysiloxane that contains, in addition to the vinyl moieties, phenyl groups, alkyl groups and silicon-bonded hydrogen atoms all in specified ratios. Various embodiments of this polymer are described in the Examples as H-I through H-VIII. Thereafter, the reference discloses several experiments wherein the bi-functional polymer is cured in the presence of n-butyl alcohol complexed chloroplatinic acid.

Claims 2, 3, 8, and 9 are rejected only because they further limit the embodiment of Applicant's invention that does not represent the foundation for rejection over Okamura. (Although Applicant has not expressly defined a polydimethyl siloxane or polymethylsiloxane as this material is alluded to in claim 7, it has been presumed by the Examiner that these polymers consist substantially only of dimethylsiloxane repeat units. The polymers germane to the present discussion disclosed in the reference would also contain diphenylsiloxane units and methylhydrogensiloxane repeat units and, thus, would seem not to be aptly described by "polydimethylsiloxane or "polymethyl siloxane".)

Concerning claims 4 and 15, other adjuvants including fumed silica are disclosed in column 7, lines 52-68.

Claims 1-5, 8-9, and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Amako et al., U.S. Patent # 6,369,185. Amako discloses a hydrosilylation curable polysiloxane composition (column 3) wherein one embodiment of component (A) is a polysiloxane bearing all of methyl, phenyl, vinyl, and hydrosilyl groups (column 4, line 10). Permutations of the hydrosilylation catalyst are mentioned in claim 10. Incorporation of fumed silica is contemplated in the examples, e.g. Example 1.

Claims 2, 3, 8, and 9 are rejected only because they further limit the embodiment of Applicant's invention that does not represent the foundation for rejection over Amako. (Although Applicant has not expressly defined a polydimethyl siloxane or polymethylsiloxane as this material is alluded to in claim 7, it has been presumed by the Examiner that these polymers consist substantially only of dimethylsiloxane repeat units. The polymers germane to the present discussion disclosed in the reference would also contain diphenylsiloxane units and methylhydrogensiloxane repeat units and, thus, would seem not to be aptly described by "polydimethylsiloxane" or "polymethyl siloxane".)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amako et al., U.S. Patent # 6,369,185. The structurally defined polymers in column 10 having all of all of methyl, phenyl, vinyl, and hydrosilyl groups do not possess a molecular weight exceeding 50,000 amu. Nevertheless, structurally related embodiments of this polymer that do adhere to the molecular weight limitations of claims 3 and 6 are readily envisaged inasmuch as polymers having a viscosity nearing 1,000,000 mPa's (column 3, line 30) would inherently be of the mandated molecular weight.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 27 of copending Application No. 10/901,713. Although the conflicting claims are not identical, they are not patentably distinct from each other because one embodiment of the invention recited by claim 5 is that wherein a vinyl-functional, phenyl group-substituted siloxane is

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combined with a polysiloxane resin having both carbon-carbon double bonds and "silicone hydrogen" groups.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Leibfried, U.S. Patent # 5,451,637 is cited as being of interest. Leibfried teaches in columns 11-13 a prepolymer derived from polycyclic polyenes and either cyclosiloxanes or tetrahedral siloxysilanes bearing a plurality of hydrosilyl groups wherein a stoichiometric excess of the vinyl group-providing polycyclic polyene is employed in the reaction carried out to an extent that substantially no hydrosilyl groups contributed by the cyclosiloxane compounds and/or siloxysilanes remain unreacted. Thereafter, said prepolymer may be reacted with an additional source of Si-H groups thereby yielding a polysiloxane-silalkylene copolymer that contains free hydrosilyl groups that may be later exploited in yet another reaction with an alkenyl group-containing polymer. As in the previous stage, there is a stoichiometric excess of vinyl moieties contributed by the prepolymer (column 13, lines 1-7) but, unlike the first stage, not all of the hydrosilyl groups contributed by the organohydrogensiloxane are consumed (column 13, lines 17-26) hence the final product contains both reactive carbon-carbon double bonds and hydrosilyl groups. This product may, in turn, be reacted with an unsaturated group-functionalized organic polymer to produce a crosslinked matrix. The final product containing both reactive carbon-carbon double bonds and hydrosilyl groups seems to be equivalent to the crosslinking agent recited in

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claim 7 that ostensibly contains at least unreacted hydrosilyl groups inasmuch as it characterized as being a crosslinking agent for the polymer materials outlined in claim 1.

Allowable Subject Matter

Claims 7 and 9-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 24, 2006


MARC S. ZIMMER
PRIMARY EXAMINER